

CHARGE NUMBER: 1005
PROJECT TITLE: Primary Process Development
PROJECT LEADER: R. T. Gaudlitz
PERIOD COVERED: August, 1984
DATE OF REPORT: September 6, 1984

Title: Casing Reconstituted Tobacco with Bright and Oriental (J. Nguyen)

Objective: Determine if casing recon with bright and Oriental will yield an improvement in cut filler sieves.

Status: The Marlboro formula was used to prorate the casing of bright, Oriental and recon portions of tobacco exiting the storage silos. However, no burley strip was added to either the control or test runs to accentuate results. The volume of bright casing used was maintained at the same level for both runs. Sieve samples taken at the cutter exit and Adt dryer outlet indicated that the test run gave lower particle sizes, e.g., 31.7% vs 34.2% on six mesh and 60.2% vs 62.4% on 6+12 mesh at the cutter exit, and 18.2% vs 21.3% on six mesh and 52.8% vs 56.7% on 6+12 mesh at the Adt dryer outlet.

Plans: No further work is planned.

Title: On-line Moisture Meter Improvement (J. Nguyen)

Objective: Improve accuracy of the on-line moisture measurements in the Semiworks.

Status: An extensive run with Marlboro blend was made for calibrating the on-line Quadra Beam II (QB-II) at the Adt dryer outlet. A total of 156 samples was taken in the range of 6.5% to 20% OV. The regression analyses indicated a strong correlation with an R coefficient of 0.990 and a standard deviation of 0.367.

Plans: 1) Continue reliability work on QB-II.
2) In conjunction with the on-line QB-II an off-line (static and semi-dynamic modes) QB-II was set up. It will be tested for measuring OV's at many different locations in the Semi-works and/or "D" primary.

Title: Cutting Study (T. Skidmore)

Objective: Using the small scale cutter determine the effect of cutting temperature, moisture, and pressure on cut filler cylinder volume.

Status: Statistical analysis of data from the recent test is practically complete. The data indicated that the best conditions for CCV and sieves were as follows:

	Cutting OV (%)	Cutting Temp. (F)	Cheese Density (g/cc)
CCV	20.5	80	0.8
On 6+12	24.6	No Effect	0.9

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It is interesting that the best cheese densities were on the lower end of the range studied (0.8 - 1.2 g/cc) suggesting that further improvement, particularly in CCV, may be possible with lower densities (cutting pressure). In the range of cutting temperature studied (80 - 150°F) increasing the temperature had little effect on shred size but had a negative effect on CCV. The data suggest that a cutting temperature below 80°F could improve CCV.

Plans: The Semiworks RC-3 and RC-4 cutters will be used to further investigate lower cheese densities. Additionally, cheese density measurements will be made on Stockton Street and MC cutters for comparison to R&D results.

Title: Steam Tunnel Development (D. Albertson)

Objective: To evaluate the effect of elevating the temperature of cut rag in a steam environment as it relates to the elimination of cutter cheese clumps prior to drying and to evaluate the potential for improvement in the physical properties of treated cut filler.

Status: The steam tunnel was modified in August to provide more steam holes in the entrance end of the unit so that a lower steam pressure could be used. It had been hypothesized that the high velocity steam at the nozzles, when operating at 100 psig, was causing degradation to the filler resulting in a 3-5 unit loss of 6+12 mesh sieve fraction. With the additional holes in the steam plenum the pressure was reduced to 20 psig with good preliminary results. Testing with this arrangement will continue in September.

R. T. Gandy

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